

June 23, 2009

DIRECTIVE: JOB CORPS INFORMATION NOTICE NO. 08-53
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TO: ALL JOB CORPS NATIONAL OFFICE STAFF
 ALL JOB CORPS REGIONAL OFFICE STAFF
 ALL JOB CORPS CENTER DIRECTORS
 ALL JOB CORPS CENTER OPERATORS
 ALL NATIONAL TRAINING AND SUPPORT CONTRACTORS
 ALL OUTREACH, ADMISSIONS, AND CTS CONTRACTORS

FROM: ESTHER R. JOHNSON, Ed.D.
 National Director
 Office of Job Corps

SUBJECT: Preventing Heat-Related Illness

1. Purpose. To inform Job Corps centers of guidance they should follow to prevent heat-related illness.

2. Background. Periods of high heat and humidity occur in the United States during the summer months, June through August. In some areas of the country, high daytime temperatures can occur as early as May and last until early October. Weather forecasters often refer to the actual temperature as well as a heat index when reporting daytime temperatures. The heat index combines air temperature with relative humidity in an attempt to determine how hot it feels. For example, the average temperature in Miami, FL is 90°F in summer with a relative humidity of 75%, compared to an average temperature in Phoenix, AZ of 104°F with a low relative humidity of 10%. According to the heat index, the relative temperature in Miami would be 109°F, compared to 90°F in Phoenix. Heat index values are taken in shade, not direct sunlight. Direct sunlight values can increase the heat index by 15°F.

Sweating or perspiration is the body's response to exposure to high temperatures in order to cool itself. The perspiration or sweat evaporates and carries heat away from the body. However, high humidity interferes with the evaporation process, causing the body to retain more heat. Strenuous exercise or exertion combined with high heat and humidity create an opportunity for heat-related illness to occur. The onset of heat-related illness can occur when the heat index reaches 90°F–105°F.

3. Risk Factors. Susceptibility to heat-related illness varies from person to person. However, children and the elderly are the most susceptible. Risk factors that may predispose

someone to heat-related illness include certain lifestyles, age, weight, alcohol/drug use, and medical conditions. Lack of acclimatization to the weather or environmental conditions where heavy, strenuous work is performed may also put a person at risk for heat-related illness.

4. Heat-Related Disorders. The most common heat-related disorders, their symptoms, and methods of treatment are as follows:

- a. Heat rash – Raised bumps or a rash that forms on the skin during the summer months where clothing is too restrictive. The condition is also known as “prickly heat.” Heat rash usually clears up on its own if the affected area is kept cool and dry. Do not apply antiperspirant, insect repellent, lotions, or powder to skin until it has been cooled and dried. Treatment should include a cool bath or shower then blotting the skin dry. Skin should remain dry and cool. Oil-based products should be avoided. If the rash persists or the bumps burst, seek medical attention. The best way to avoid prickly heat is to wear lightweight, unrestrictive clothing. Make sure that the skin is allowed to cool and dry, and avoid situations that may result in excessive sweating.
- b. Heat cramps – Painful, involuntary muscle spasms due to loss of salt in the muscles. The muscles affected are those fatigued by heavy work or exercise performed in hot environments. The shoulders, calves, and thighs are most often affected. The risk of developing heat cramps is the highest during the first few days of performing an activity one is not used to. Risk also increases if a person perspires excessively during work or exercise and consumes large amounts of water or other beverages that do not contain salt. Medical attention should be sought if rest and restoring fluid and electrolyte levels do not eliminate symptoms. If unable to drink fluids because of nausea or vomiting, or if dizziness, fatigue, headache, malaise, shortness of breath, high temperature, and vomiting occur, seek medical attention. Self-treatment for heat cramps includes rest in a cool environment and drinking commercially available beverages designed to replenish electrolytes or a salt-to-water solution of $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon of salt to one quart of water.
- c. Heat exhaustion – One of the milder heat-related illnesses that can develop over several days of exposure to high temperatures and unbalanced replacement of fluids. The elderly and anyone working or exercising in a hot environment are more susceptible to heat exhaustion. Symptoms include profuse sweating, rapid pulse, nausea or vomiting, weakness, muscle cramps, dizziness, cool and clammy skin, and headache, with normal oral temperature but elevated core temperature, and fainting. Treat heat exhaustion with cool, non-alcoholic beverages as directed by a physician. Take cool showers or baths, rest in a cool, air conditioned environment, and wear lightweight clothing.
- d. Heat stroke – This condition, although rare, is the most serious with the highest potential for death. Heat stroke occurs after performing strenuous work or exercise in extreme heat, high humidity, or under the sun. Under these conditions,

the body may be unable to dissipate heat, resulting in an increase in body temperature up to 106°F or above. Symptoms can mimic a heart attack or other conditions and can include heat exhaustion; diminished sweating; hot, dry, flushed skin; and increased body temperature. If heat stroke is suspected, treatment must begin immediately in addition to arranging transport to the nearest medical facility. The victim should be removed to a shaded area or air conditioned room. Clothing should be removed and cool or tepid water should be applied to skin. Fan the victim to promote sweating and evaporation. Place icepacks under the victim's arms and groin. Monitor temperature with a thermometer and continue cooling until body temperature drops to 101°F–102°F.

- e. Dilutional hyponatremia (over-hydration) – A condition that occurs when there is an imbalance of water-to-salt intake. There have been cases in recent years where individuals have died from drinking too much water. Symptoms include dizziness, confusion, irritability, and possible headache. Physical signs include tightness or puffiness in the hands, wrists, and feet; and lack of urination followed by high volumes of crystal clear urine accompanied by shivering. Rapid and severe hyponatremia causes water to enter the brain cells resulting in swelling, followed by seizure, coma, respiratory arrest, brain stem herniation, and death. A balance between electrolyte replacement and adequate water consumption is the best way to avoid this condition.

5. Action. Job Corps centers shall educate students and staff about the risk factors, as well as the signs and symptoms of heat-related illness. Students and staff, especially individuals who have a predisposition to heat-related illness due to lifestyle, age, or medical condition shall be encouraged to do the following:

- a. Drink plenty of water (at least 2 liters per day) or other electrolyte-replenishing beverages.
- b. Dress for the weather – lightweight, light-colored clothing and hats. Apply sunscreen to exposed skin.
- c. Eat small meals and eat more often. Avoid foods high in protein and sugar.
- d. Slow down and pace activity.
- e. During high heat or poor air quality advisories, refrain from participating in outdoor activities, if possible.
- f. Take regular breaks.

Centers are encouraged to provide students and staff with awareness training at the onset of high temperatures and periodically throughout the summer months to ensure that everyone can identify the signs and symptoms of heat-related illness and how best to respond to an emergency.

Addressees are to ensure that this Information Notice is distributed to all appropriate staff.

6. Expiration Date. Until superseded.

7. Inquiries. Direct all inquiries to Marsha Fitzhugh at (202) 693-3099 or fitzhugh.marsha@dol.gov, Kelley Clark at (202) 693-3089 or clark.kelley@dol.gov, or Heather Edmonds at (202) 693-3774 or edmonds.heather@dol.gov.